

## WHAT IS CLAIMED IS:

1           1.    For use in a video recording device capable of storing a  
2 plurality of video programs on a disk drive, a video memory manager  
3 comprising:

4               a video memory controller capable of detecting that said  
5 disk drive does not contain sufficient storage space to store a  
6 next-to-be-recorded program, wherein said video memory controller,  
7 in response to said detection, determines a first retention score  
8 associated with a first one of said plurality of video programs and  
9 a second retention score associated with a second one of said  
10 plurality of video programs, wherein said first and second  
11 retention scores indicate a desirability of retaining said first  
12 and second video programs respectively, and wherein said video  
13 memory controller deletes a least desirable one of said first and  
14 second video programs.

1           2.    The video memory manager as set forth in Claim 1 wherein  
2 said video memory controller replaces said deleted least desirable  
3 video program with a program abstract identifying and describing  
4 said deleted least desirable video program.

1           3.    The video memory manager as set forth in Claim 1 wherein  
2   said video memory controller compresses said least desirable video  
3   program prior to deleting said least desirable video program.

1           4.    The video memory manager as set forth in Claim 1 wherein  
2   said video memory controller deletes said compressed least  
3   desirable video program if said video memory controller determines  
4   that said disk drive still does not contain sufficient storage  
5   space to store said next-to-be-recorded program after compression  
6   of said least desirable video program has occurred.

1           5.    The video memory manager as set forth in Claim 1 wherein  
2   said video memory controller determines said first and second  
3   retention scores according to a plurality of factors associated  
4   with said first and second video programs.

1           6.    The video memory manager as set forth in Claim 5 wherein  
2   said plurality of factors comprises at least one of:

3               a user-entered rank ordering associated with said first  
4   and second video programs;

5               relative fairness of deleting said first video if said  
6   first video is associated with a first user of said video recording  
7   device and said second video is associated with a second user of  
8   said video recording device;

9               relative freshness of said first and second video  
10   programs;

11              relative durations of said first and second video  
12   programs compared to a duration of said next-to-be-recorded  
13   program;

14              relative similarity of a category of said first video  
15   program and a category of said second video program compared to a  
16   category of said next-to-be-recorded program; and

17              at least one of: 1) a program genre ratings associated  
18   with said first and second video programs; 2) a number of times a  
19   television series associated with said first video program has been  
20   viewed; and 3) a program rating derived from at least one of: A) a  
21   user rating; and B) a rating retrieved from a program guide.

1           7.    A video recording device comprising:

2 a disk drive capable of storing a plurality of video  
3 programs;

4 a video recording controller capable of receiving  
5 incoming video programs from an external source and storing said  
6 received incoming video programs on said disk drive; and

7 a video memory controller capable of detecting that said  
8 disk drive does not contain sufficient storage space to store a  
9 next-to-be-recorded program, wherein said video memory controller,  
10 in response to said detection, determines a first retention score  
11 associated with a first one of said plurality of video programs and  
12 a second retention score associated with a second one of said  
13 plurality of video programs, wherein said first and second  
14 retention scores indicate a desirability of retaining said first  
15 and second video programs respectively, and wherein said video  
16 memory controller deletes a least desirable one of said first and  
17 second video programs.

1 8. The video recording device as set forth in Claim 7  
2 wherein said video memory controller replaces said deleted least  
3 desirable video program with a program abstract identifying and  
4 describing said deleted least desirable video program.

1 9. The video recording device as set forth in Claim 7

2 wherein said video memory controller compresses said least  
3 desirable video program prior to deleting said least desirable  
4 video program.

1 10. The video recording device as set forth in Claim 7  
2 wherein said video memory controller deletes said compressed least  
3 desirable video program if said video memory controller determines  
4 that said disk drive still does not contain sufficient storage  
5 space to store said next-to-be-recorded program after compression  
6 of said least desirable video program has occurred.

1 11. The video recording device as set forth in Claim 7  
2 wherein said video memory controller determines said first and  
3 second retention scores according to a plurality of factors  
4 associated with said first and second video programs.

1        12. The video recording device as set forth in Claim 11  
2 wherein said plurality of factors comprises at least one of:

3            a user-entered rank ordering associated with said first  
4 and second video programs;

5            relative fairness of deleting said first video if said  
6 first video is associated with a first user of said video recording  
7 device and said second video is associated with a second user of  
8 said video recording device;

9            relative freshness of said first and second video  
10 programs;

11           relative durations of said first and second video  
12 programs compared to a duration of said next-to-be-recorded  
13 program;

14           relative similarity of a category of said first video  
15 program and a category of said second video program compared to a  
16 category of said next-to-be-recorded program; and

17           at least one of: 1) a program genre ratings associated  
18 with said first and second video programs; 2) a number of times a  
19 television series associated with said first video program has been  
20 viewed; and 3) a program rating derived from at least one of: A) a  
21 user rating; and B) a rating retrieved from a program guide.

1        13. For use in a video recording device capable of storing a

2 plurality of video programs on a disk drive, a method of managing  
3 the plurality of stored video programs comprising the steps of:

4 detecting that the disk drive does not contain sufficient  
5 storage space to store a next-to-be-recorded program;

6 determining a first retention score associated with a  
7 first one of the plurality of video programs;

8 determining a second retention score associated with a  
9 second one of the plurality of video programs, wherein the first  
10 and second retention scores indicate a desirability of retaining  
11 the first and second video programs respectively; and

12 deleting a least desirable one of the first and second  
13 video programs.

1 14. The method as set forth in Claim 13 further comprising  
2 the step of replacing the deleted least desirable video program  
3 with a program abstract identifying and describing the deleted  
4 least desirable video program.

1 15. The method as set forth in Claim 13 further comprising  
2 the step of compressing the least desirable video program prior to  
3 the step of deleting the least desirable video program.

1 16. The method as set forth in Claim 13 further comprising

2 the step of deleting the compressed least desirable video program  
3 in response to a determination that the disk drive still does not  
4 contain sufficient storage space to store the next-to-be-recorded  
5 program after compression of the least desirable video program has  
6 occurred.

1 17. The method as set forth in Claim 13 further comprising  
2 the sub-steps of determining the first and second retention scores  
3 according to a plurality of factors associated with the first and  
4 second video programs.



1        18. The method as set forth in Claim 17 wherein the plurality  
2 of factors comprises at least one of:

3            a user-entered rank ordering associated with the first  
4 and second video programs;

5            relative fairness of deleting the first video if the  
6 first video is associated with a first user of the video recording  
7 device and the second video is associated with a second user of the  
8 video recording device;

9            relative freshness of the first and second video  
10 programs;

11           relative durations of the first and second video programs  
12 compared to a duration of the next-to-be-recorded program;

13           relative similarity of a category of the first video  
14 program and a category of the second video program compared to a  
15 category of the next-to-be-recorded program; and

16           at least one of: 1) a program genre ratings associated  
17 with the first and second video programs; 2) a number of times a  
18 television series associated with said first video program has been  
19 viewed; and 3) a program rating derived from at least one of: A) a  
20 user rating; and B) a rating retrieved from a program guide.

1        19. For use in a video recording device capable of storing a  
2 plurality of video programs on a disk drive, a computer-readable  
3 storage medium containing computer-executable instructions for  
4 managing the plurality of stored video programs, the computer-  
5 executable instructions comprising the steps of:

6            detecting that the disk drive does not contain sufficient  
7 storage space to store a next-to-be-recorded program;

8            determining a first retention score associated with a  
9 first one of the plurality of video programs;

10           determining a second retention score associated with a  
11 second one of the plurality of video programs, wherein the first  
12 and second retention scores indicate a desirability of retaining  
13 the first and second video programs respectively; and

14           deleting a least desirable one of the first and second  
15 video programs.

1        20. The computer-readable storage medium as set forth in  
2 Claim 19 further comprising the step of replacing the deleted least  
3 desirable video program with a program abstract identifying and  
4 describing the deleted least desirable video program.

1        21. The computer-readable storage medium as set forth in  
2 Claim 19 further comprising the step of compressing the least  
3 desirable video program prior to the step of deleting the least  
4 desirable video program.

1        22. The computer-readable storage medium as set forth in  
2 Claim 19 further comprising the step of deleting the compressed  
3 least desirable video program in response to a determination that  
4 the disk drive still does not contain sufficient storage space to  
5 store the next-to-be-recorded program after compression of the  
6 least desirable video program has occurred.

1        23. The computer-readable storage medium as set forth in  
2 Claim 19 further comprising the sub-steps of determining the first  
3 and second retention scores according to a plurality of factors  
4 associated with the first and second video programs.

1        24. The computer-readable storage medium as set forth in  
2 Claim 23 wherein the plurality of factors comprises at least one  
3 of:

4            a user-entered rank ordering associated with the first  
5 and second video programs;

6            relative fairness of deleting the first video if the  
7 first video is associated with a first user of the video recording  
8 device and the second video is associated with a second user of the  
9 video recording device;

10           relative freshness of the first and second video  
11 programs;

12           relative durations of the first and second video programs  
13 compared to a duration of the next-to-be-recorded program;

14           relative similarity of a category of the first video  
15 program and a category of the second video program compared to a  
16 category of the next-to-be-recorded program; and

17           at least one of: 1) a program genre ratings associated  
18 with the first and second video programs; 2) a number of times a  
19 television series associated with the first video program has been  
20 viewed; and 3) a program rating derived from at least one of: A) a  
21 user rating; and B) a rating retrieved from a program guide.